

## REMARKS

Reconsideration of this application is respectfully requested.

Upon entry of the foregoing amendments, claims 1-2, 4-21, 25, 26 and 28-31 are pending in the application, with claims 1, 21 and 26 being the independent claims. Claims 1, 15, 18, 21, 25, 26 and 28 are sought to be amended, and claims 3, 22-24 and 27 are sought to be canceled. New claim 31 is sought to be added. These changes are believed to add no new matter, and their entry is respectfully requested.

Based on the above amendments and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

At the outset, Applicant's representative, Albert J. Fasulo, II, thanks Examiner Raevis for the courtesy of a telephonic interview held on August 2, 2003. During the interview, Examiner Raevis kindly clarified the Restriction Requirement of 5/05/04. In view of this discussion, none of the non-elected claims have been canceled at this time. Applicant will cancel the non-elected claims upon receiving instructions to do so from Examiner Raevis.

The technical features of the claims in relation to the cited prior art were not discussed, and no agreement was reached regarding the patentability of any claim.

### ***Rejections Under 35 U.S.C. Sec. 112, Second Paragraph***

Original claim 15 depended from claim 13. Claim 15 is amended to depend from claim 14, which provides antecedent basis for "the recessed surfaces."

Original claim 18 depended from claim 15. Claim 18 is amended to depend from claim 17, which provides antecedent basis for "the cut out regions."

Claim 3 is canceled. However, substantially all of the features of canceled claim 3, revised to obviate the rejection thereof under Sec. 112, second paragraph, are incorporated into amended claim 1. The system recited in amended claim 1 includes an aerosol collector having a removable sample plate, and a mass analyzer (canceled claim 3) configured to receive the plate from the collector. Exemplary support for this language can be found in the present application at paragraph 33.

Claim 25, which recites the same features as claim 3, is amended in the same manner the features recited in canceled claim 3 (now in claim 1) are revised.

Claim 27 is canceled.

The rejection of claim 30 under Sec. 112, second paragraph, is obviated by the amendments listed above.

***Prior Art Rejections***

The claim rejections listed on pages 3-5 of the Office Action are now traversed.

Claims 22-24 and 27 are canceled, thereby rendering moot their respective rejections.

Amended claim 1, including the features of a mass analyzer recited in canceled claim 3, as revised, is believed patentable over the prior art of record.

All claims depending from claim 1 are believed patentable for at least the same reasons claim 1 is patentable.

Claim 21 is amended to clarify the inventive combination of features of the present invention, and to distinguish over the prior art of record. The subject matter of each of canceled claims 22-24 is substantially incorporated into amended claim 21.

The invention recited in amended claim 21 (now referred to herein as claim 21) is patentable over all of the references of record, taken individually or together, for at least all of the reasons advanced below

Claim 21 recites a radio controlled unmanned aerial vehicle (RC UAV) having a plurality of rotary blades each *powered by a battery set*, in combination with an aerosol collector spaced equidistantly from the plurality of rotary blades. The aerosol collector includes an interior fan that draws multiple flows of aerosol sample from ambient into the aerosol collector interior and onto a sample plate therein.

Compared to liquid fuel powered vehicles, the *battery* powered RC UAV is advantageous for collecting air samples from ambient because such collected air samples are not compromised by otherwise contaminating fuels or their exhaust byproducts. See the present application at paragraph [0024], last sentence. The interior fan creates negative pressure within the collector to efficiently draw in such air for sampling, uncontaminated by fuel/exhaust. The prior art does not disclose or suggest this advantageous combination of features recited in claim 21.

The prior art does not disclose or suggest the further feature of an aerosol collector *fan* mounted in the collector housing *downstream from the sample plate* for drawing in sample from ambient, as is also recited in claim 21.

Nor does the prior art disclose or suggest the feature of an aerosol collector spaced equidistantly from the plurality of rotary blades, as is recited in claim 21.

Claim 21 further recites:

a stepper motor mounted in the housing and configured to rotate the sample surface (S-S) about the axis of symmetry such that the multiple asymmetric flows of aerosol sample impact the sample surface as it rotates so as to form multiple separated concentric circular tracks (66, 68) of collection spots thereon, the circular concentric tracks having (i) their respective centers coinciding with the axis of symmetry (S-S), and (ii) different respective radii.

Exemplary support for this claim language is provided in the present application at paragraph [0029], and in FIGs. 4 and 5. The “separated concentric circular tracks of collection spots” formed on the sample surface advantageously render the sample surface compatible with a TOF mass analyzer having analysis channels indexed to the concentric tracks. See claim 25. Additionally, the multiple tracks allow for redundancy in the sample, and thus for a more reliable detection of the collected samples. See the present application at paragraph [0031], second sentence.

The prior art does not disclose or suggest the arrangement of tracks recited in claim 21. Burghoffer (U.S. Patent 4,640,140), see, e.g., FIGs. 1a, 1b and 2, teaches a sample plate 1 having an axis of rotation 33 offset with respect to an axis of perforated plate 2. As a result of this arrangement, Burghoffer states that:

the deposits of particles collected on the collection disks (1) cover wide annular surfaces, with adjacent annular surfaces being juxtaposed such that *the deposited particles are homogenously spread over virtually the entire surface area of the disk.*

Burghoffer: col. 2, lines 17-28; col. 3, line 55-col. 4, line 3; and FIGs. 1a, 1b.

Burghoffer’s arrangement produces a sample that is homogenously spread over the entire sample disk. This is in contrast to, and in fact, teaches away from “multiple separated concentric circular tracks of collection spots . . . having (i) their respective centers coinciding with the axis of symmetry, and (ii) different respective radii,” as is recited in claim 21.

For at least all of the reasons advanced above, the inventive combination of elements recited in claim 21 is neither taught nor suggested by any of the references mentioned above either alone or in combination.

Claim 25 is patentable for at least the same reasons advanced above for the patentability of claim 21, and further on its own merits.

Claim 26 is amended to include all of the features of canceled claim 27, and also the separated concentric track arrangement discussed above. Claim 26 is patentable for at least the same reasons advanced above regarding the separated concentric track arrangement.

Claims 28-30 are patentable for at least the same reasons claim 26 is patentable.

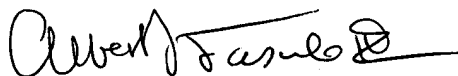
Claim 28 is patentable on its own merits.

New claim 31 recites all of the features of claim 21, except for those features directed to a vehicle. That is, new claim 31 recites only the aerosol collector features of claim 21. Accordingly, claim 31 is patentable for at least the reason that it recites the separated concentric arrangement of tracks neither disclosed nor suggested in the art of record.

### ***Conclusion***

On the basis of the above amendments and remarks, reconsideration and allowance of this application is believed warranted. If the Examiner believes, for any reason, that personal communication will expedite prosecution, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully Submitted,



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